PAGER
Estimate of population exposure

Seismogram Displays
Current seismic activity

ShakeMaps
Maps depicting shaking intensity

Earthquake Animations
Past 7-days

Earthquake Notifications
Sign up for free emails

KML / RSS Feeds
Google Earth and RSS feeds and data

Seismic Hazard Maps and Data

Probabilistic and scenario ground-motion hazard maps, input and output data, and documentation. More…

Seismic Design Maps, Data, and Tools for Engineers

Tools allowing users to determine ground motion values at a site for various building code reference documents. More…

Buildings **Bridges**

Collaborative Earthquake Products

J. Gomberg & Many Others

PNSN

Washington Military Department
Emergency Management Division

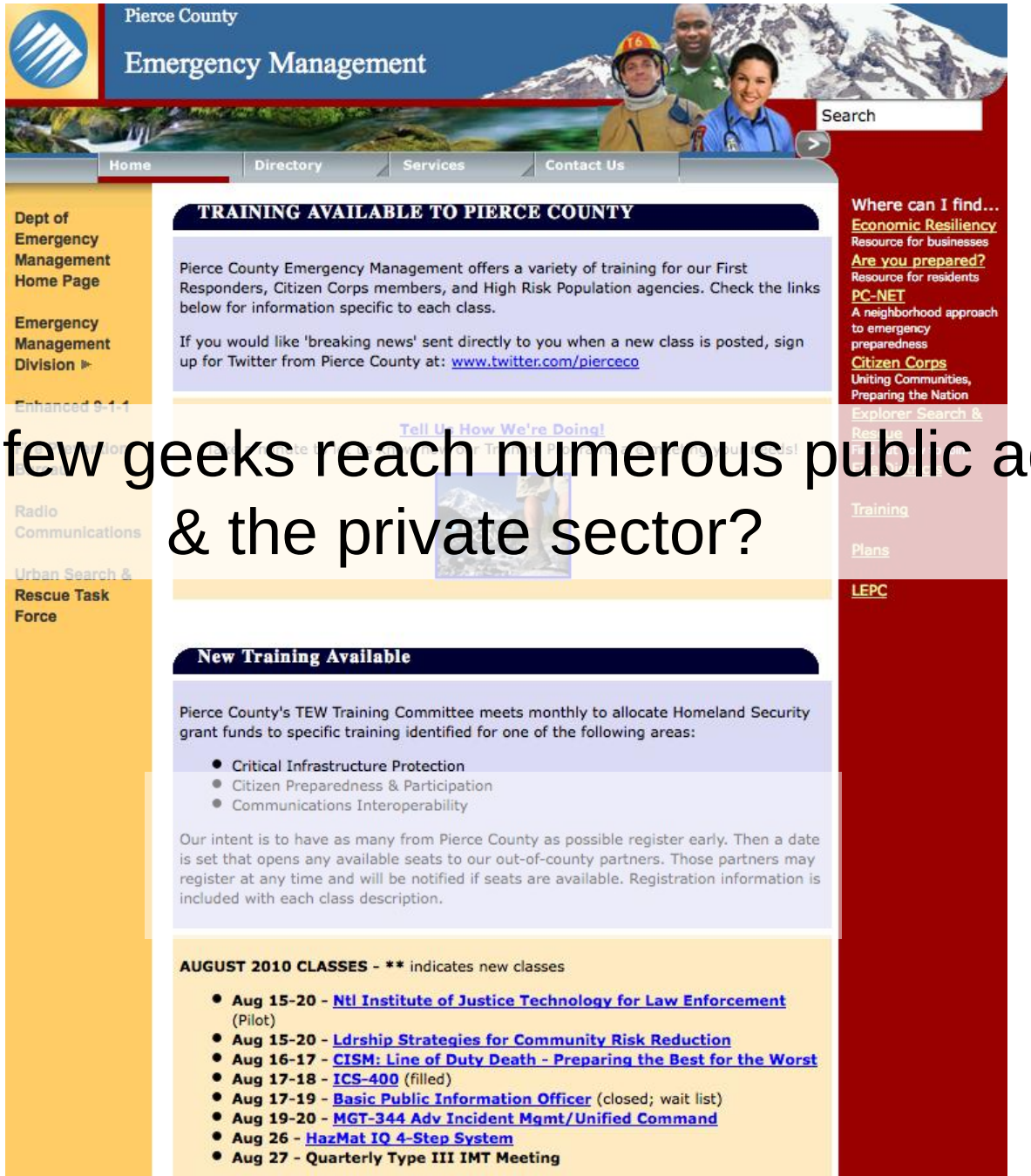
USGS
science for a changing world

Pierce County
Emergency Management

Why?

2009 Pierce County ‘ShakeNQuake’ Exercise

Ditto for other exercises.



How can a few geeks reach numerous public agencies & the private sector?

Pierce County

Emergency Management

Search

Home | Directory | Services | Contact Us

Dept of Emergency Management Home Page

Emergency Management Division

Enhanced 9-1-1

Fire Prevention Bureau

Radio Communications

Urban Search & Rescue Task Force

TRAINING AVAILABLE TO PIERCE COUNTY

Pierce County Emergency Management offers a variety of training for our First Responders, Citizen Corps members, and High Risk Population agencies. Check the links below for information specific to each class.

If you would like 'breaking news' sent directly to you when a new class is posted, sign up for Twitter from Pierce County at: www.twitter.com/pierceco

Take a minute to let us know how we are meeting your needs!

Piggyback!

Collaborate!

Embed!

New Training Available

Pierce County's TEW Training Committee meets monthly to allocate Homeland Security grant funds to specific training courses for the following areas:

- Critical Infrastructure Protection
- Citizen Preparedness & Participation
- Communications Interoperability

Our intent is to have as many from Pierce County as possible register early. Then a date is set that opens any available seats to our out-of-county partners. Those partners may register at any time and will be notified if seats are available. Registration information is included with each class description.

AUGUST 2010 CLASSES - ** indicates new classes

- **Aug 15-20 - Ntl Institute of Justice Technology for Law Enforcement** (Pilot)
- **Aug 15-20 - Ldrship Strategies for Community Risk Reduction**
- **Aug 16-17 - CISM: Line of Duty Death - Preparing the Best for the Worst**
- **Aug 17-18 - ICS-400** (filled)
- **Aug 17-19 - Basic Public Information Officer** (closed; wait list)
- **Aug 19-20 - MGT-344 Adv Incident Mgmt/Unified Command**
- **Aug 26 - HazMat IQ 4-Step System**
- **Aug 27 - Quarterly Type III IMT Meeting**

Where can I find...

Economic Resiliency
Resource for businesses

Are you prepared?
Resource for residents

PC-NET
A neighborhood approach to emergency preparedness

Citizen Corps
Uniting Communities, Preparing the Nation

Explorer Search & Rescue
Find out how to join!

Fire Districts

Training

Plans

LEPC

By *collaborating* with the Pierce County & Washington State Depts. of Emergency Mgmt., CPARM, & CREW we *piggybacked* on already scheduled training sessions & other forums and have met with hundreds of intended users.

Businesses:

Puget Sound Energy, Boeing Employee Credit Union (BECU), Expedia, Safeway, T-Mobile, PACCAR, Costco

Public & Private Sector Contingency Planners:

Business Cont. Ctr of Seattle, Motricity, Nordstrom, PEMCO Ins., Premera Blue Cross, Russell Invest. Group, Liberty Mutual, Worldvision, BEST Alliance, Bank of America,Columbia Bank, Univ. of WA

Emergency Managers:

WA State EMD, Pierce County DEM, Univ. of WA

Healthcare Providers:

Cascade Blood Serv.,Tacoma-Pierce Cty Health Dept., WA State Health Dept., Multicare, Franciscan Health System, WA State Hospital Assoc.

We have *embedded* USGS personnel in the region-wide 2012 Evergreen Earthquake Exercise Series planning process.

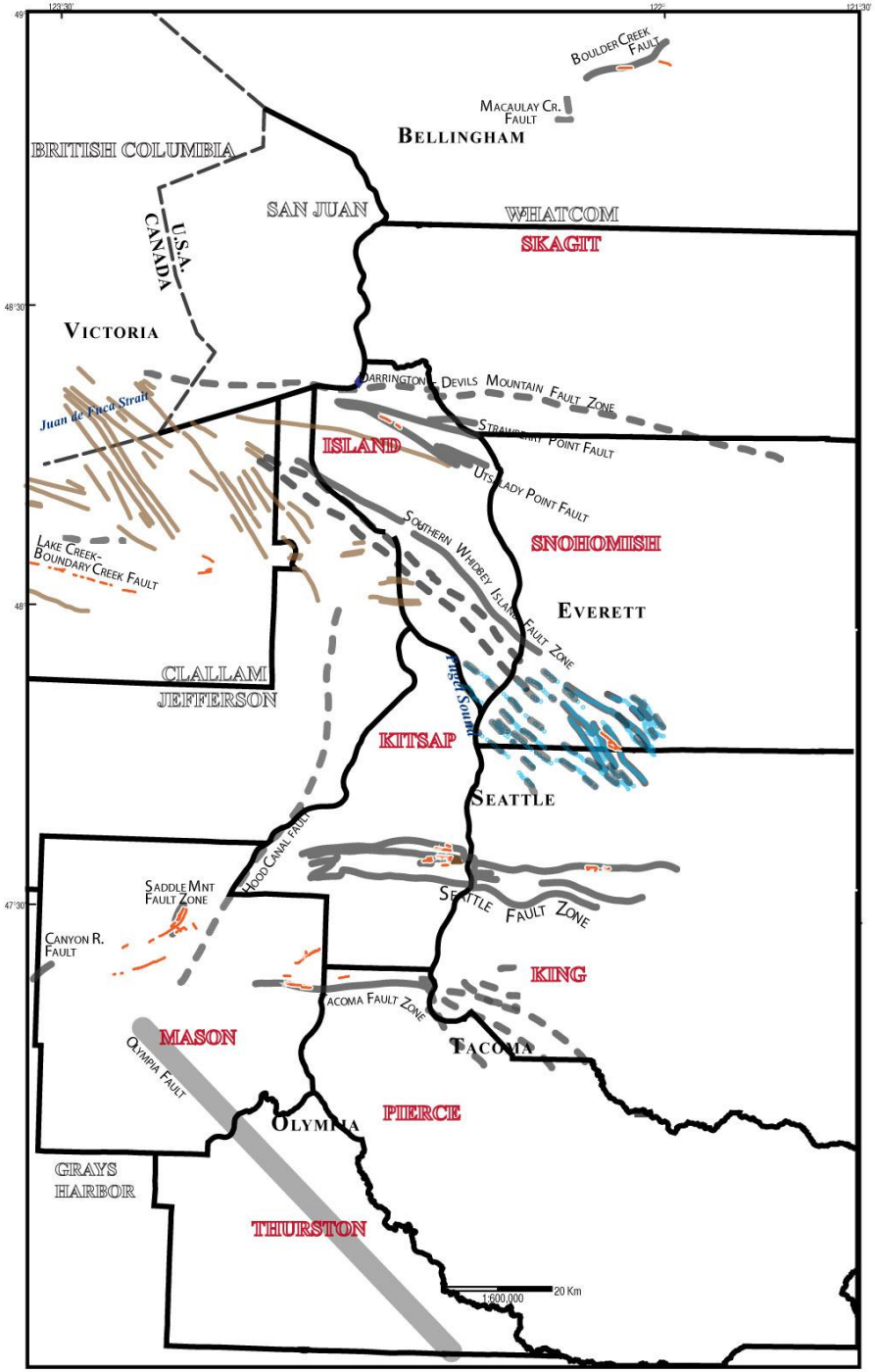
We have embedded USGS personnel in the region-wide 2012 Evergreen Earthquake Exercise Series planning process.

In the context of the Evergreen Exercise, USGS also is *collaborating* with the Washington State EMD to assess EHP product usage, enhance, develop, & test products.

Washington Military Department
Emergency Management Division

Step #1: Learning about county & local level needs.

We listened at Focus Group sessions, with 8 County Emergency Management Departments & their constituents, and a State Agency Liaisons group.



USGS science for a changing world

Washington Military Department
Emergency Management Division

What did we learn?

The Seattle Times

Quake rattles south Puget Sound

Seismologists says a light earthquake shook parts of the south Puget Sound area Tuesday morning.

The Associated Press

MORTON, Wash. —

Seismologists says a light earthquake shook parts of the south Puget Sound area Tuesday morning.

The Pacific Northwest Seismograph Network says the magnitude 4.2 quake occurred at 7:51 a.m. and was centered about 7 miles west of Morton, or about 40 miles south of Olympia.

The quake was widely felt in the Olympia area and north Lewis County, but Lewis County sheriff's Chief Deputy Stacey Brown says she's received no reports of injuries or damage.

Nov. 16, 2010

3.7 quake under Whidbey Island rattles windows

The 3.7 magnitude earthquake under Whidbey Island came about an hour before most alarm clocks were set to go off, but University of Washington scientists say it should serve as a wake-up call that a much bigger quake is likely in the future.

By DONNA GORDON BLANKINSHIP
Associated Press Writer

SEATTLE —

The 3.7 magnitude earthquake under Whidbey Island came about an hour before most alarm clocks were set to go off, but University of Washington scientists say it should serve as a wake-up call that a much bigger quake is likely in the future.

The deep quake came from the same zone that produced the destructive 6.8 Nisqually quake in 2001, which cracked the state Capitol dome and rained bricks down from historic buildings in Seattle's Pioneer Square neighborhood.

"Every 20 to 30 years, we have one at 6.5 or greater," said UW seismology lab coordinator Bill Steele. "It is the most frequent source of damaging earthquakes in the region and it will produce big ones in the future."

July 1, 2009

We can't rely on the Earth to market for us...

We can’t rely on the Earth to market for us…

Infrequency of earthquakes presents challenges:

MANY citizens aren’t aware products exist!

Convey information in everyday language & images.

Shakemap pn10150611

Instrumental Intensity Peak Ground Acceleration Peak Ground Velocity Uncertainty

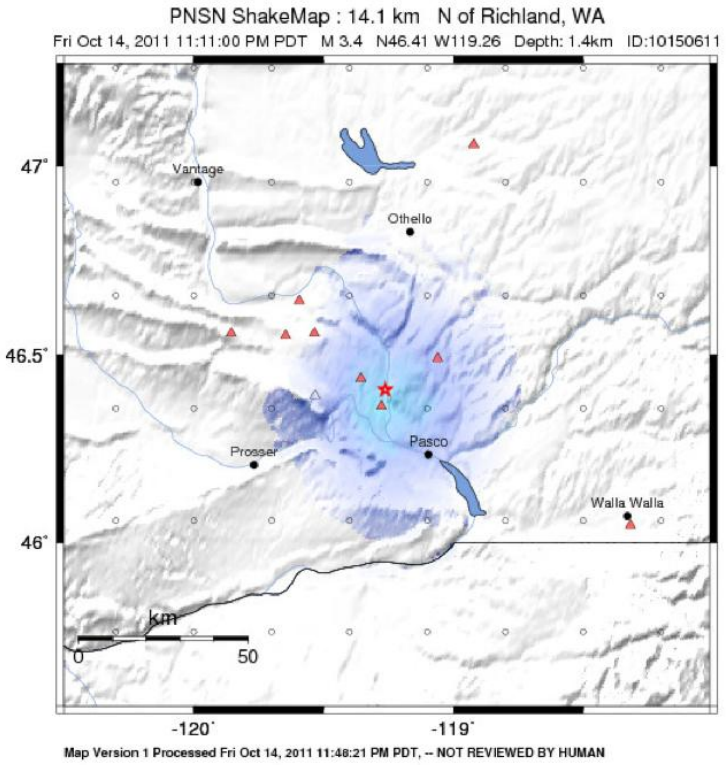
Media Maps

Decorated Bare

Downloads

Instrumental Intensity

Available Formats: JPG (117 kB) II PS (333 kB)



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	*<.17*	*.17-1.4*	*1.4-3.9*	*3.9-9.2*	*9.2-18*	18-34	34-65	65-124	>124
PEAK VEL.(cm/s)	<0.1	0.1-1.1	1.1-3.4	3.4-8.1	*8.1-16*	*16-31*	*31-60*	*60-116*	*>116*
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

Understandable (with effort)…

Convey information in everyday language & images.

Shakemap pn10150611

Instrumental Intensity | Peak Ground Acceleration | Peak Ground Velocity | Uncertainty

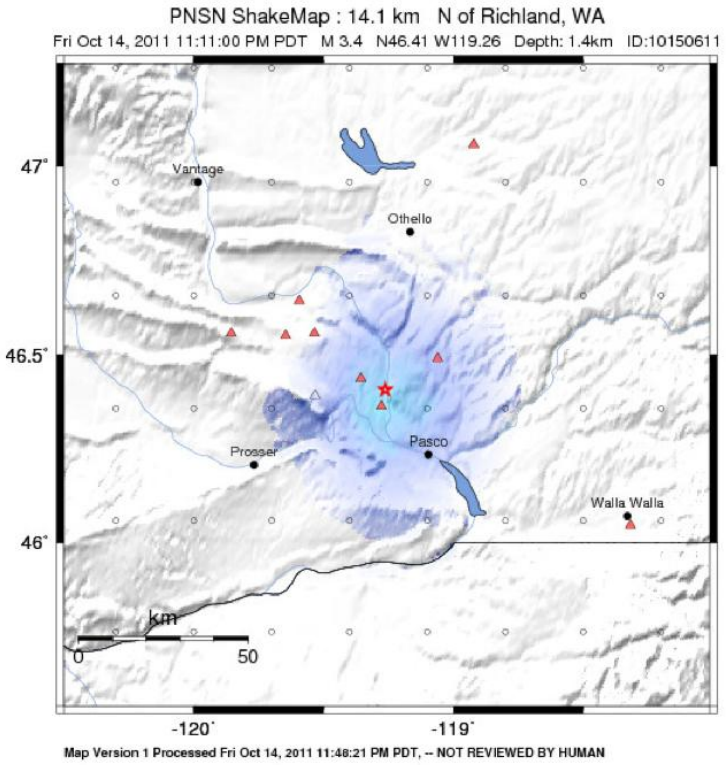
Media Maps

Decorated | Bare

Downloads

Instrumental Intensity

Available Formats: JPG (117 kB) || PS (333 kB)



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Instrumental Intensity | Peak Ground Acceleration | Peak Ground Velocity | Uncertainty

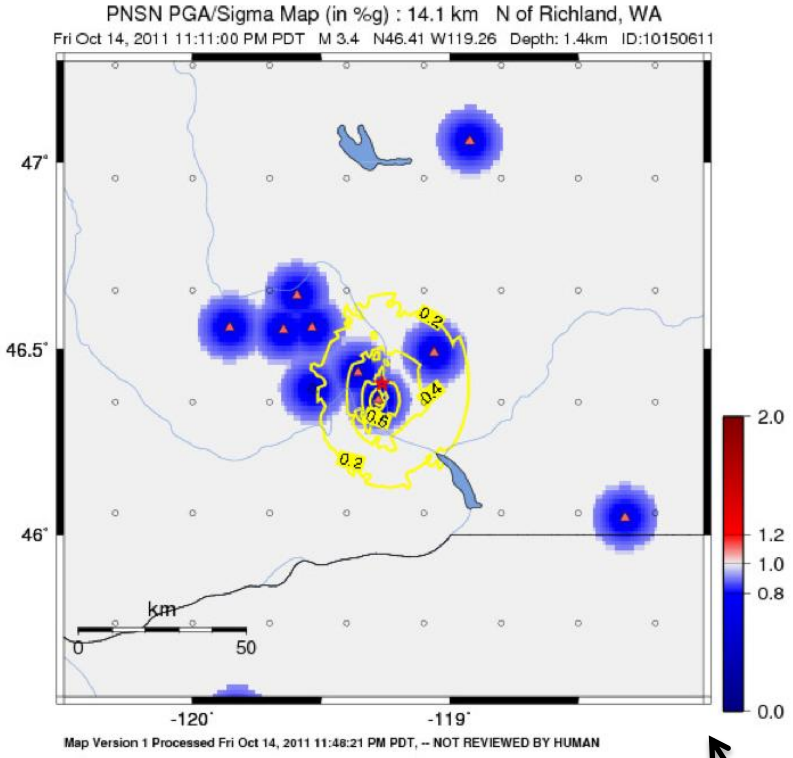
Media Maps

Decorated | Bare

Downloads

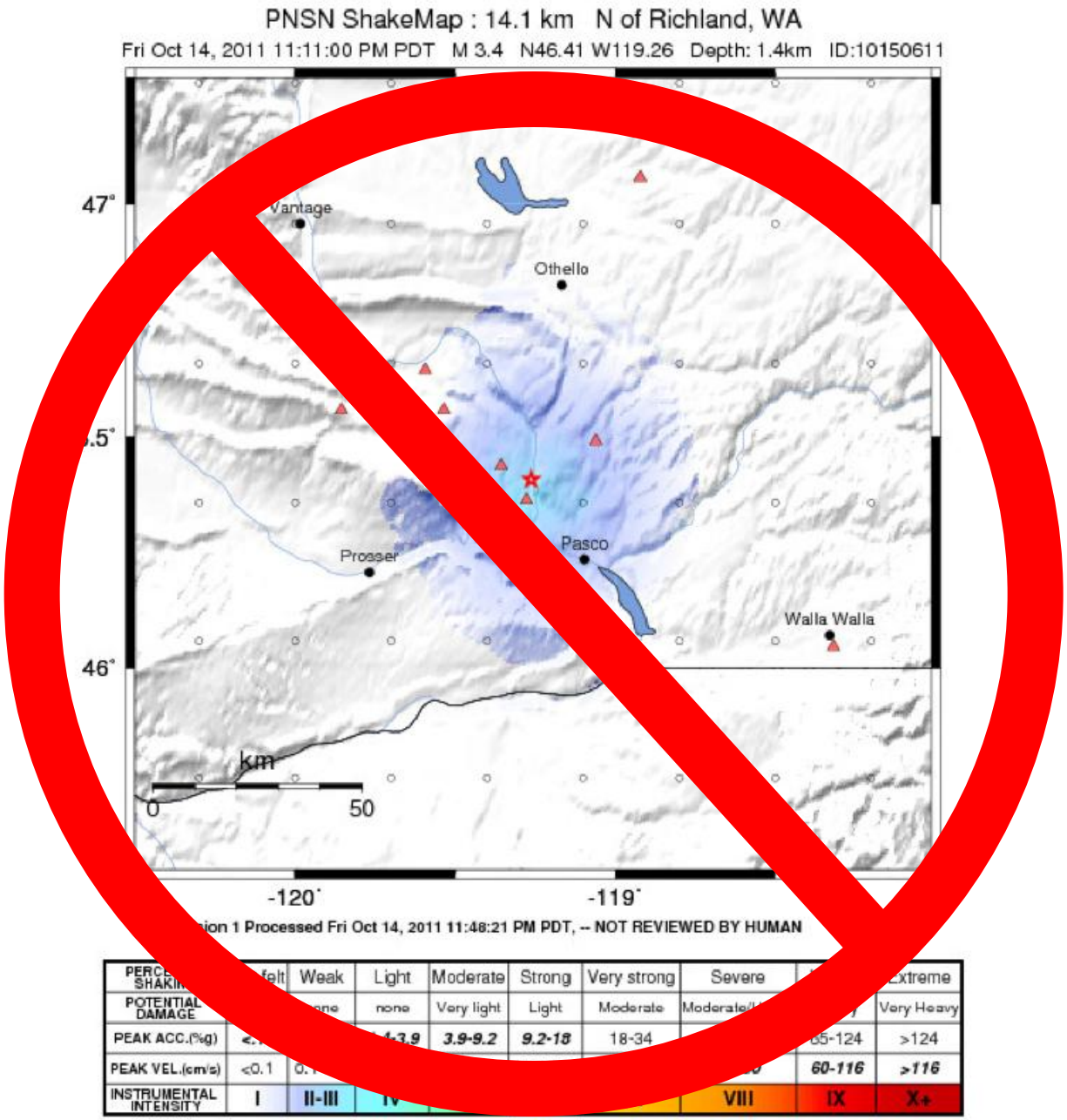
Uncertainty

Available Formats: JPG (64 kB) || PS (17 kB)

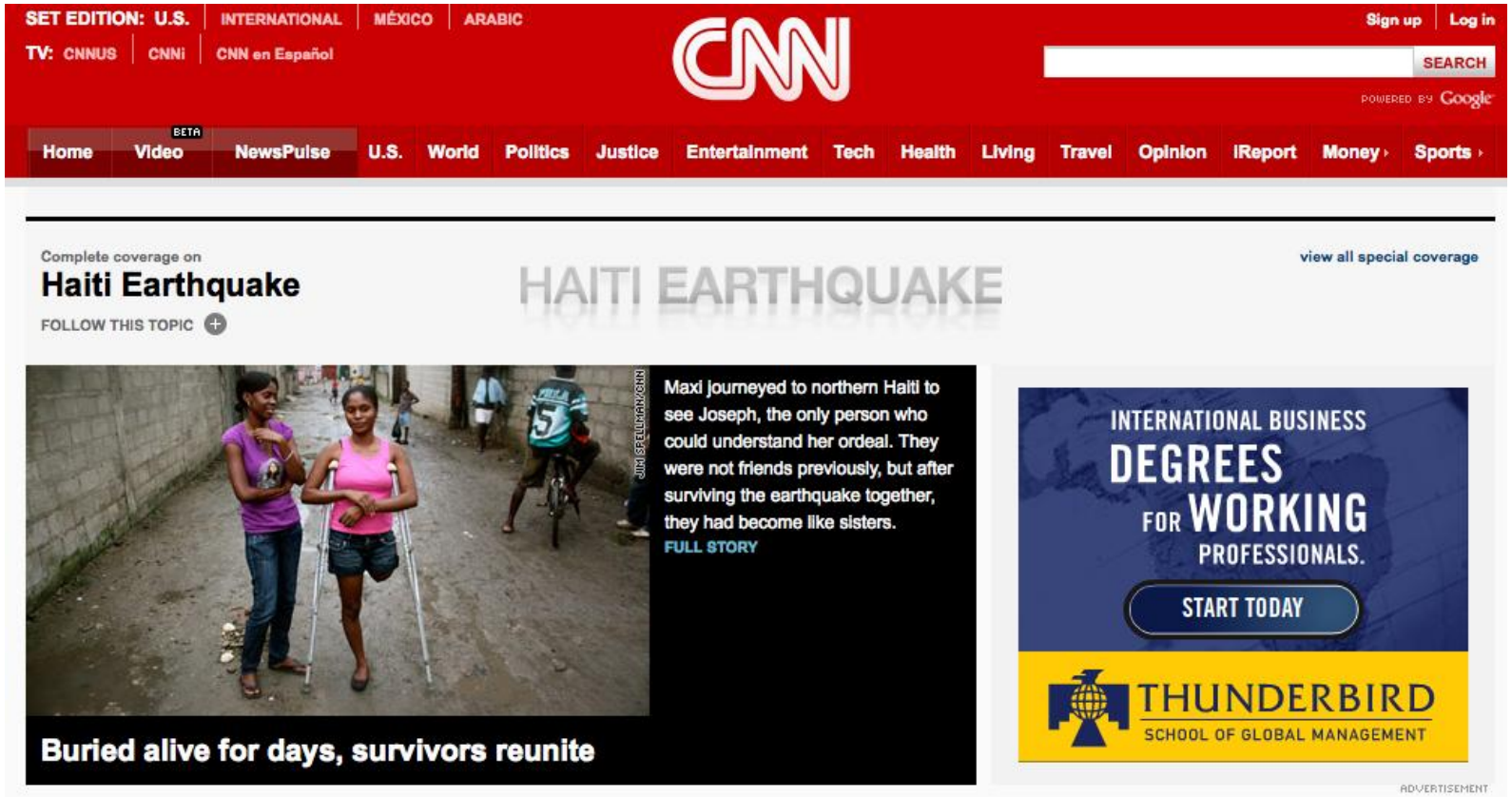


Understandable (with effort)…NOT!

Convey **IMPACT!**

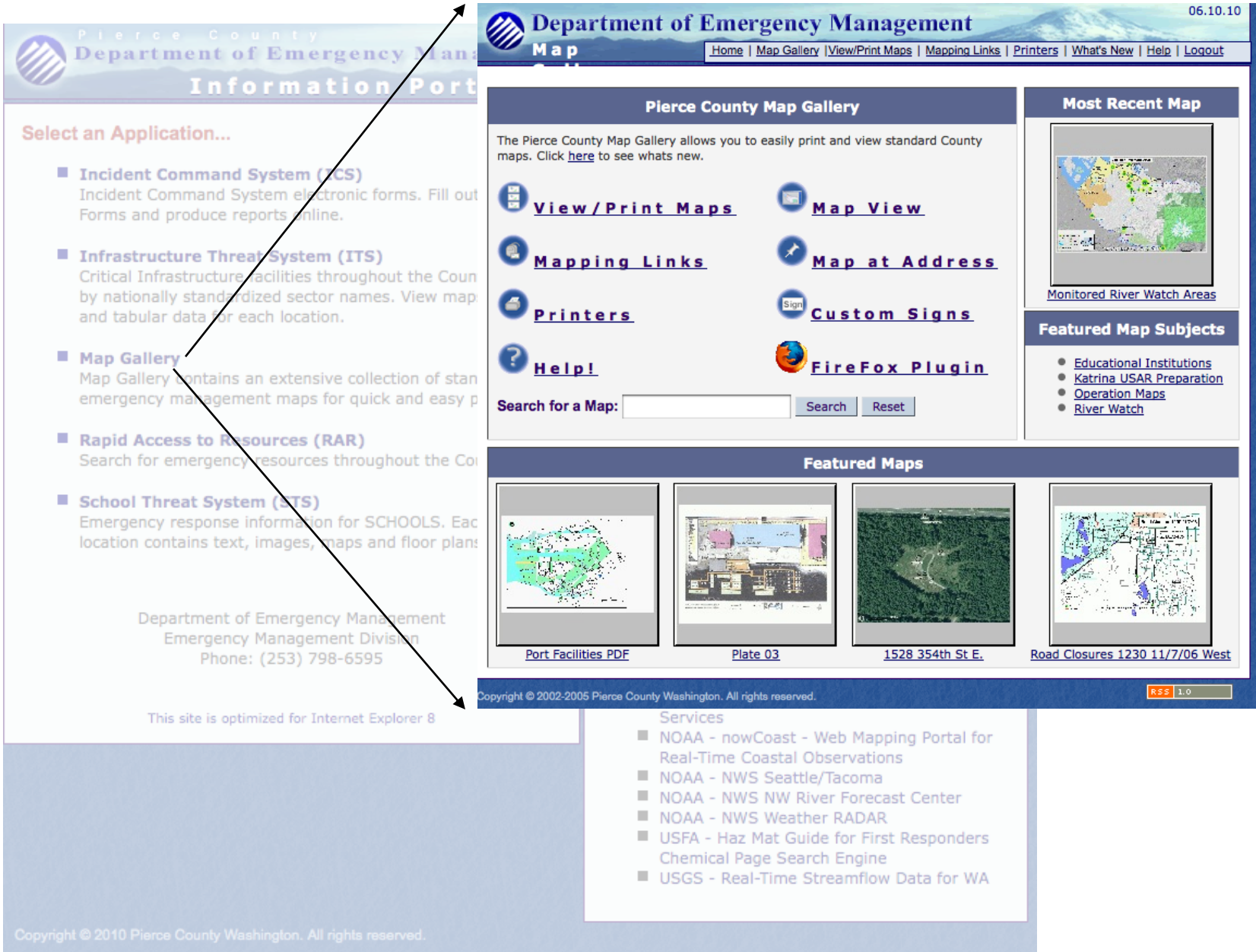


Convey **IMPACT!** Use familiar tools.

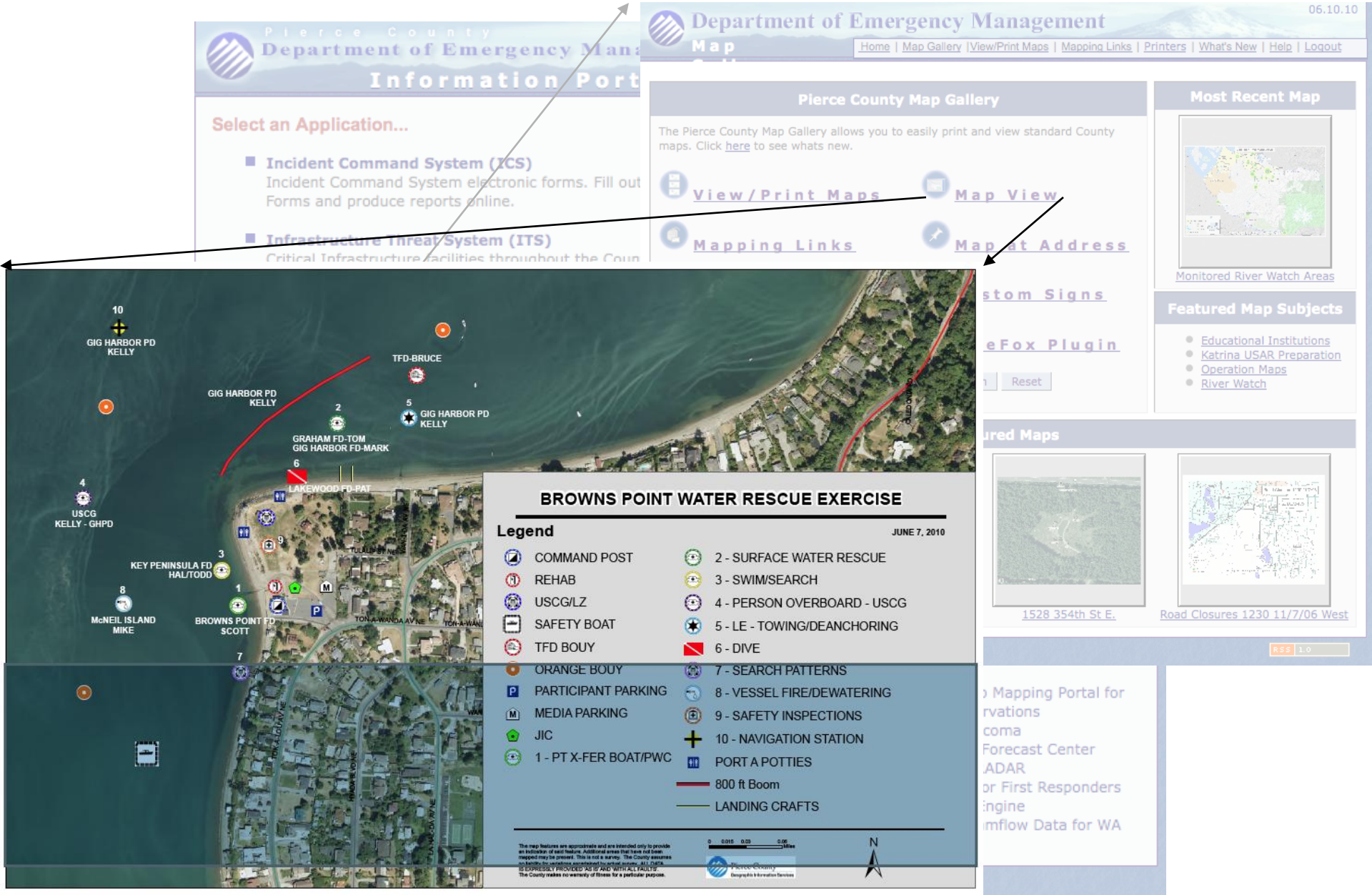


Use familiar tools.

Use familiar tools. Products easily integrated.

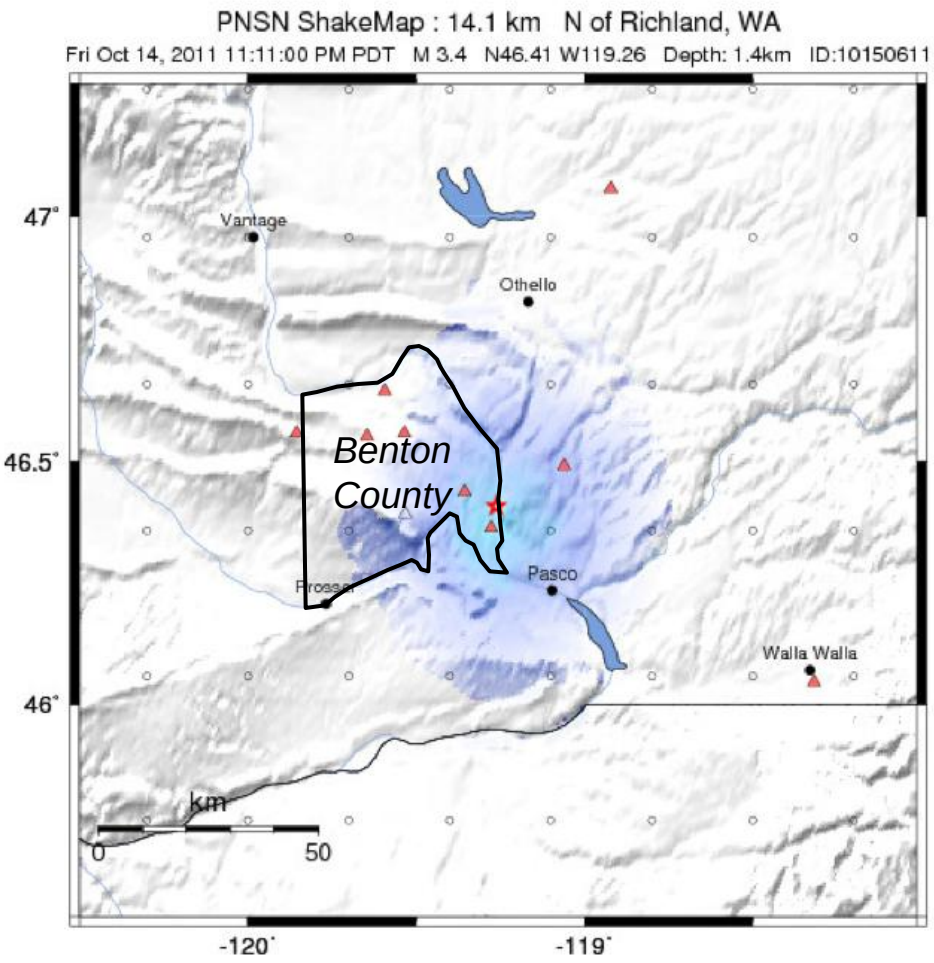


Products easily integrated. Consider scale!



Perspective is LOCAL!

Scale needs to be local.



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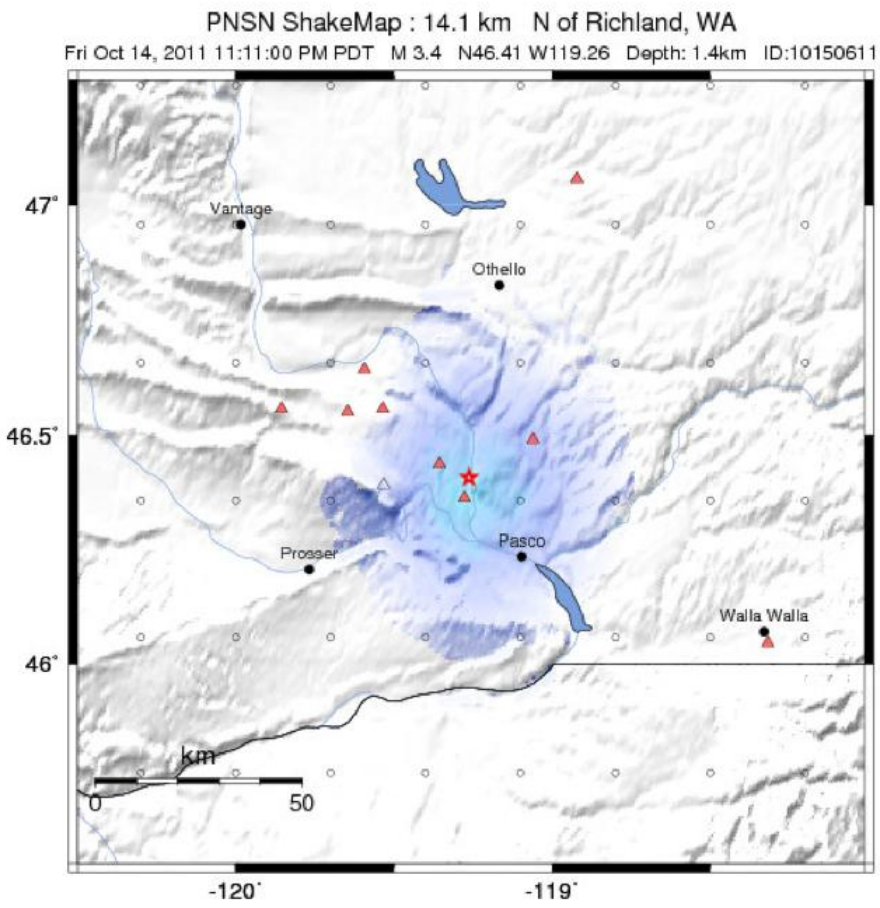
Cultural difference – trust boots-on-the-ground observations,

Cultural difference – trust boots-on-the-ground observations,

not remotely acquired ones & models.



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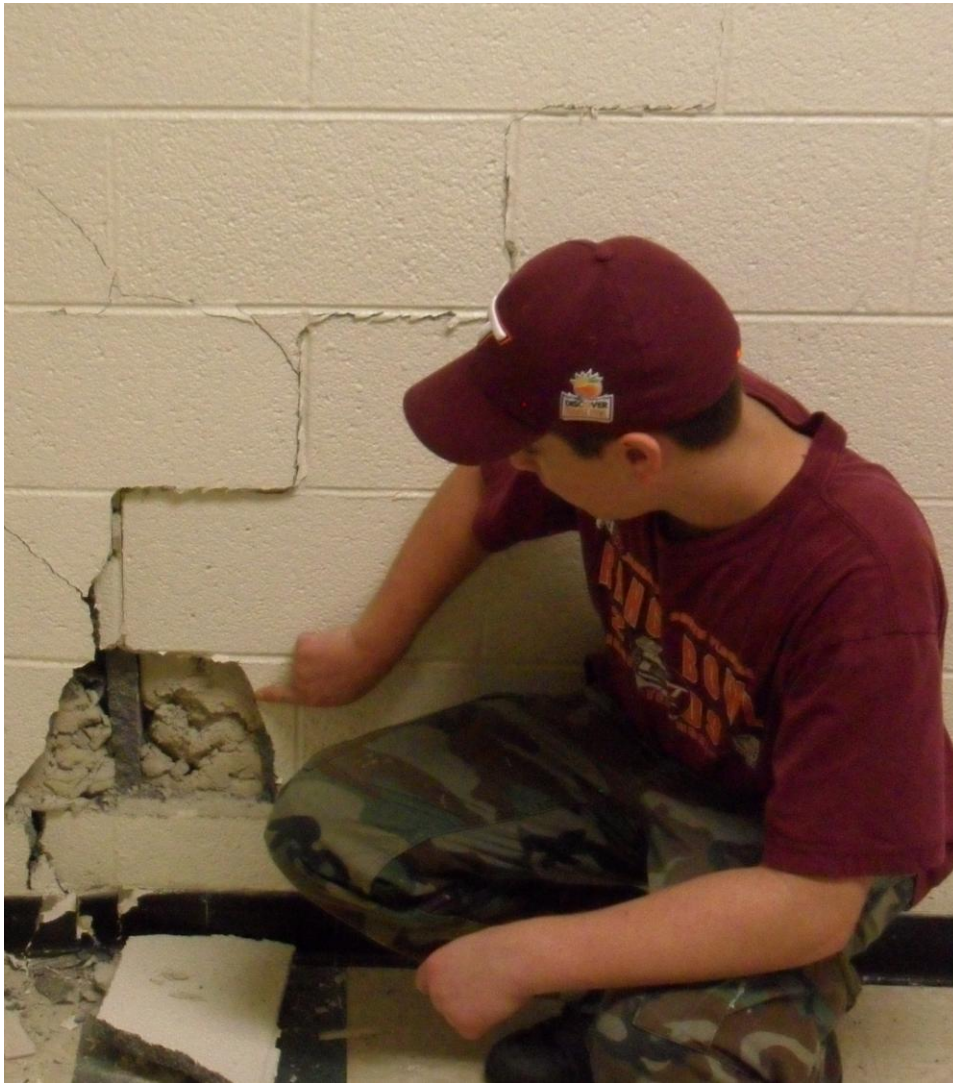
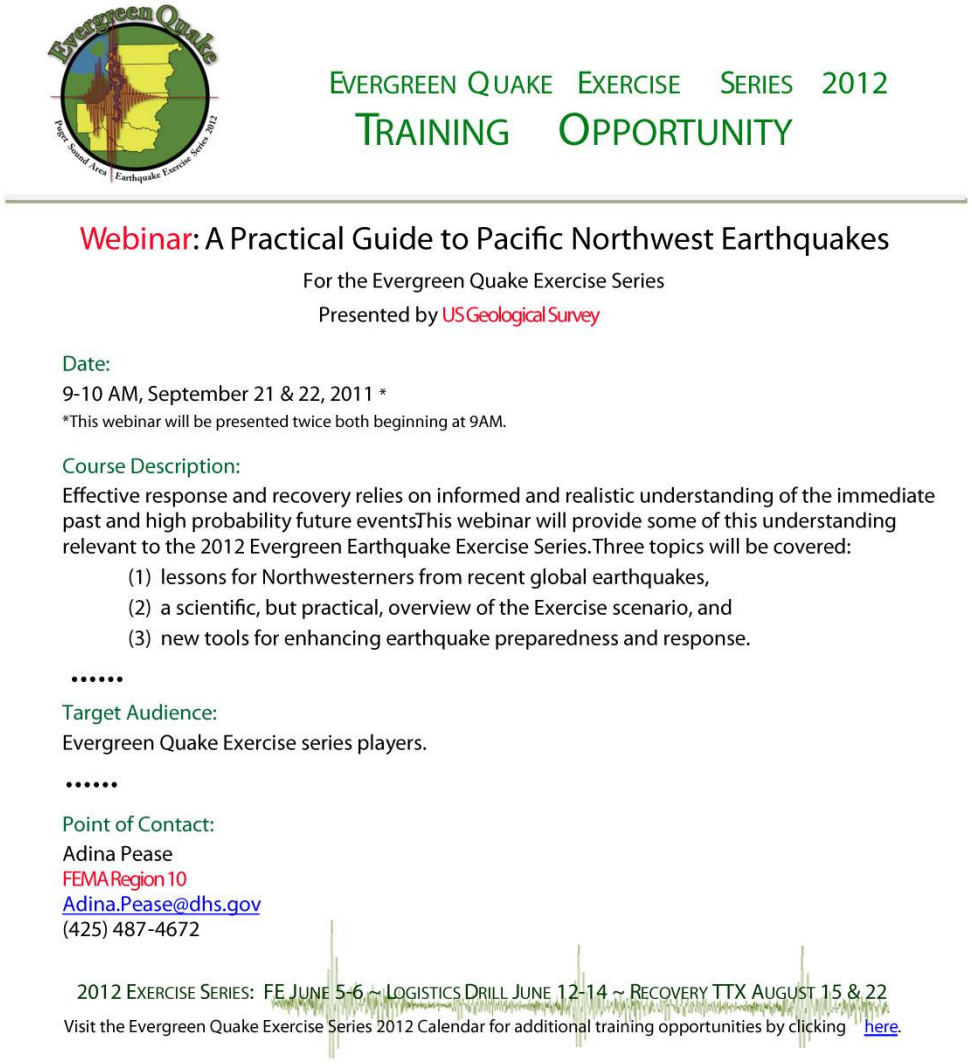


What to do?

We hypothesize that products developed by BOTH users & developers will more likely be used.

We're holding webinars to address awareness.



EVERGREEN QUAKE EXERCISE SERIES 2012

TRAINING OPPORTUNITY

Webinar: A Practical Guide to Pacific Northwest Earthquakes

For the Evergreen Quake Exercise Series

Presented by US Geological Survey

Date:

9-10 AM, September 21 & 22, 2011 *

*This webinar will be presented twice both beginning at 9AM.

Course Description:

Effective response and recovery relies on informed and realistic understanding of the immediate past and high probability future eventsThis webinar will provide some of this understanding relevant to the 2012 Evergreen Earthquake Exercise Series.Three topics will be covered:

(1) lessons for Northwesterners from recent global earthquakes,

(2) a scientific, but practical, overview of the Exercise scenario, and

(3) new tools for enhancing earthquake preparedness and response.

••••••

Target Audience:

Evergreen Quake Exercise series players.

••••••

Point of Contact:

Adina Pease
FEMA Region 10
Adina.Pease@dhs.gov
(425) 487-4672

2012 EXERCISE SERIES: FE JUNE 5-6 ~ LOGISTICS DRILL JUNE 12-14 ~ RECOVERY TTX AUGUST 15 & 22

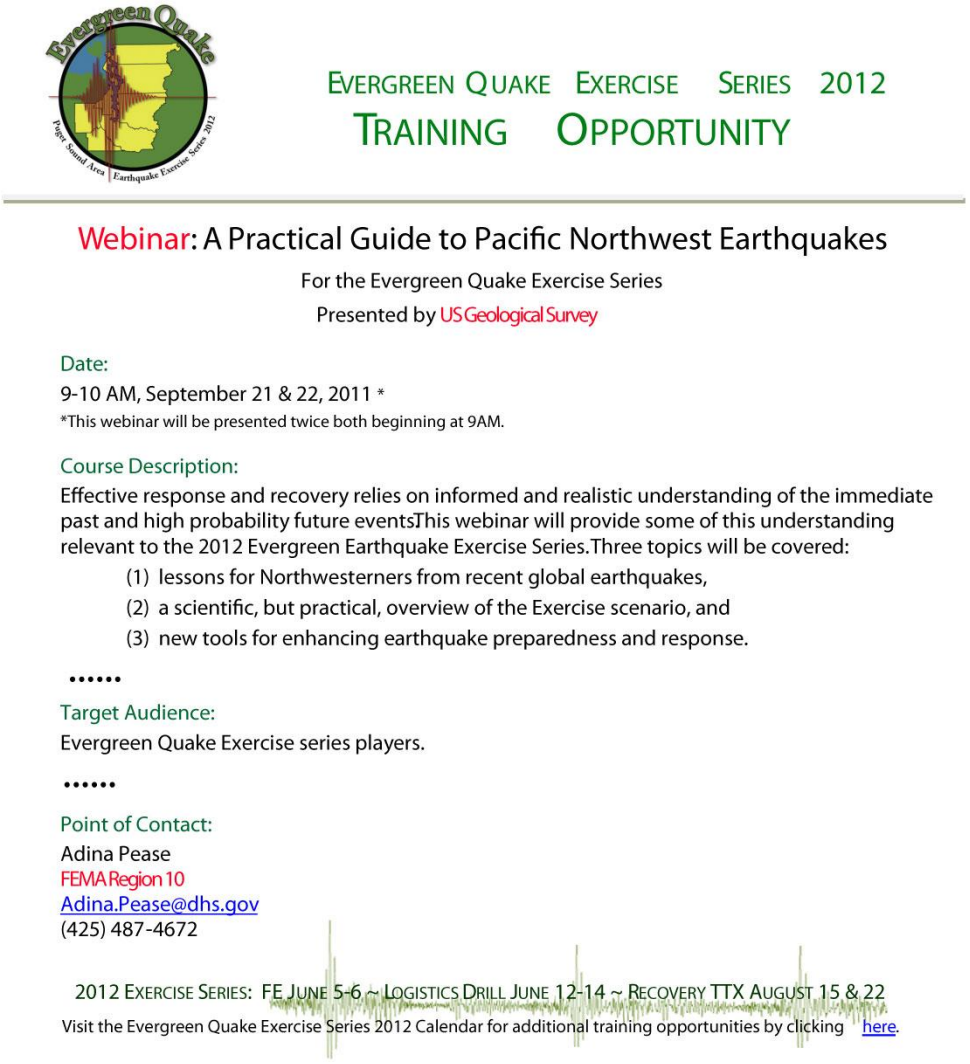
Visit the Evergreen Quake Exercise Series 2012 Calendar for additional training opportunities by clicking here.

USGS science for a changing world

Washington Military Department
Emergency Management Division

We contend that products developed by BOTH users & developers will more likely be used.

We're turning this into an online training.



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USGS science for a changing world

Washington Military Department
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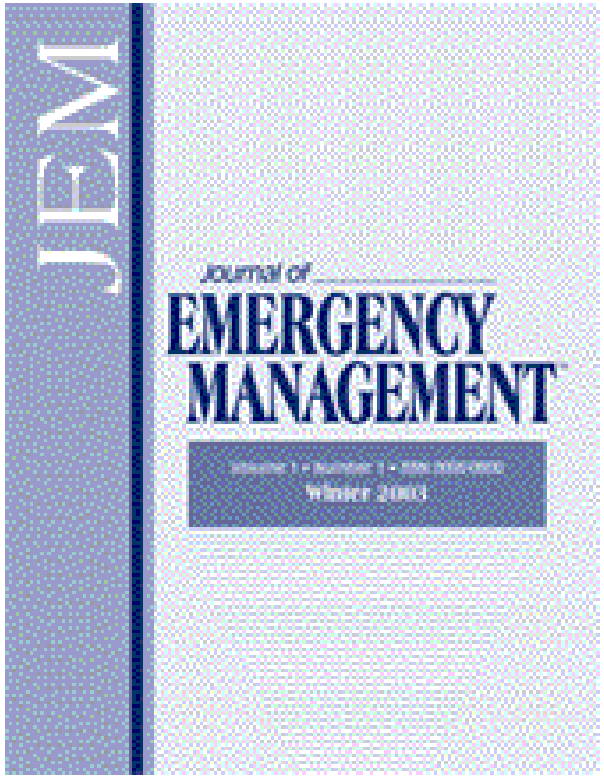
Washington EMD personnel joined the USGS Earthquake Notification Service development team.

USGS science for a changing world

Washington Military Department
Emergency Management Division

We're testing our approach in various venues….



A Collaborative, User-Producer, Assessment of Earthquake Response Products

Joan Gomberg, US Geological Survey, Seattle, Washington
Allen Jakobitz, Washington State Emergency Management Division, Camp Murray, Washington

Introduction

We contend that agencies or individuals focused on addressing immediate societal needs sometimes address only perceived, rather than truly known needs. Sometimes too, the fulfillment of the targeted need is simply assumed or only indirectly assessed, rather by directly polling the intended beneficiaries. Our final contention is that activities and…

We're using the Evergreen Exercise to test new messages & delivery mechanisms.

ShakeMaps

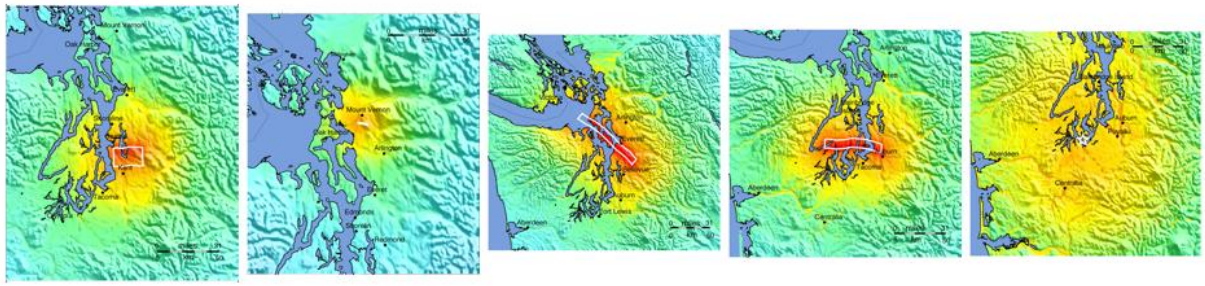
What are they?
Most ShakeMaps are automated maps of earthquake-generated ground motions and shaking intensity, produced within minutes after the occurrence of significant earthquakes. The maps are derived from measurements recorded by networks of sensors deployed throughout the US and globally. Intended applications of ShakeMaps include post-earthquake response and recovery, public and scientific information, and preparedness exercises and disaster planning by federal, state, and local organizati both public and private. The U.S. Geological Survey Earthquake Hazards Program and its partner regional seismic network operators produce ShakeMaps.

'Scenario' ShakeMaps display the same information as those generated for actual earthquakes, but for hypothetical earthquakes. The ground motions expected from an earthquake with specific characteristics are calculated using models of the earthquake itself, the materials that the seismic waves travel through, and the governing physical processes. Real earthquake ShakeMaps also employ models to interpolate between measurements, so that both types of ShakeMaps present simplified and imperfect versions of the true ground motions.

ShakeMaps displayed in units of 'intensity' provide generalized views of the likely impacts of an earthquake. Values of intensity measure the severity of the shaking strength in terms of its potential to impact the built environment and human perception, under very general conditions. Other measures of ground shaking reflect what instruments might record directly, and might be used as input for more quantitative estimates of earthquake impacts. Examples include assessments of the performance of specific buildings and other structures by engineers, or inputs to risk assessment tools like FEMA's HAZUS program.

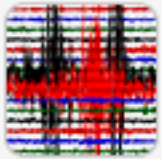
2012 Evergreen Earthquake Exercise ShakeMaps
This webpage provides links to background information and tools for downloading the 5 scenario ShakeMaps used for the 2012 Evergreen Earthquake Exercise Series. To download one of these ShakeMaps, click on the image of the ShakeMap desired and a download page will open. You may select from several file formats and measures of ground shaking ('intensity' is shown below); click here for some additional instructions about how to use these files [NEED TO ADD THIS]. To learn more about the fault that generates the particular scenario earthquake and other related geological tidbits, click on the title above the ShakeMap image below.

M6.7 Seattle | M5.7 Darrington-Devils Mtn | M7.4 South Whidbey Island | M7.1 Tacoma | M7.2 Olympia-Nisqually



Have a ShakeMap Delivered (Pushed) to You!
You can have ShakeMaps delivered to you whenever one is generated, instead of having to look for them. Click here for information about what methods you can use to do this, and how to set it up. [NEED TO ADD THIS]

PAGER
Estimate of population exposure



Seismogram Displays
Current seismic activity

ShakeMaps
Maps depicting shaking intensity

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Probabilistic and scenario ground-motion hazard maps, input and output data, and documentation. More…

Seismic Design Maps, Data, and Tools for Engineers

Tools allowing users to determine ground motion values at a site for various building code reference documents. More…

Buildings **Bridges**

Your Suggestions?

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